

REMARKS

The Office Action dated November 17, 2005 has been received and carefully studied.

The Examiner rejects claims 1, 3, 4, 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Japanese reference '874 in view of Hinderling, claims 2 and 5 as being unpatentable over JP '874 in view of Hinderling and further in view of JP '891, and claim 8 as being unpatentable over JP '874 in view of Hinderling, and further in view of JP '018. The Examiner states that JP '874 discloses a survey reference that projects a distance measuring light 700, an operation device 2000 removably attached to the main unit, an image pickup unit 810, and a display unit 2200 in radio communication with the main unit for displaying the image. The Examiner admits that JP '874 does not disclose a rotatable reflection mirror to direct the measuring light to the object being measured and the light receiving units, but cites Hinderling as teaching this feature. The Examiner considers that it would have been obvious to have a rotating reflection mirror to direct the measuring light to the object being measured and the light receiving units in the JP '874 reference to provide optional locations for the light receivers. JP '891 is cited for its disclosure of a leveling unit to adjust the tilt of the surveying instrument. JP '018 is cited for its disclosure of

determining the 3-dimensional image by acquiring data from more than one direction.

By the accompanying amendment, claims 1, 3 and 6 have been amended to better define the invention. New claims 9 and 10 have been added. Claims 2, 4 and 5 have been cancelled.

The surveying instrument of the present invention projects a measuring light via a reflection mirror, and receives the measuring light and a light for acquiring an image via the reflection mirror. The reflection mirror is supported rotatably in two directions, a horizontal direction and a vertical direction. Also, the measuring light is projected to an arbitrary direction by rotation of the reflection mirror only. Furthermore, via the reflection mirror, the present invention can receive a reflection light from an object to be measured that is positioned in an arbitrary direction.

In addition, a light receiving unit, which receives the reflection light, can detect a light receiving position on the light receiving unit. Also, a direction to the object to be measured is calculated based on a horizontal angle of the reflection mirror and an elevation angle of the reflection mirror, and based on the light receiving position on the light receiving unit. A position of the object to be measured can be

calculated based on the result of measuring distance to the object to be measured, and based on the calculated direction.

The present invention associates two or more acquired image data with measuring directions and the results of the measuring distance. Two or more image data can be composed by associating.

JP '874 discloses that a telescope 100 is supported rotatably in a vertical direction, and that a supporter material 200 for supporting the telescope is rotatable in a horizontal direction. However, JP '874 does not disclose or suggest a reflection mirror supported rotatably in two directions that are the horizontal direction and a vertical direction. Further, JP '874 does not disclose or suggest components to receive the measuring light and a light for acquiring an image.

In addition, JP '894 does not disclose or suggest that a light receiving position is detected on a light receiving unit and does not disclose or suggest that it is possible to calculate a position of the object to be measured based on a horizontal angle, an elevation angle of the reflection mirror, and the detected light receiving position.

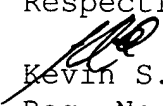
Hinderling does not supply the deficiencies of JP '874. Hinderling shows a dividing prism (a rotating mirror) 18 having a semi-reflecting surface 18a. The dividing prism can rotate in a horizontal direction, and a reflection light is guided to a

sensor via the dividing prism 18. However, the dividing prism 18 only rotates in the horizontal direction; it does not rotate in the vertical direction. Also, the dividing prism 18 only directs a reflection light to a light receiving unit, and an emitting light is projected via a mirror 12. Therefore, the dividing prism 18 is completely different from a reflection mirror as recited in the instant claims. Furthermore, Hinderling does not disclose or suggest detecting a horizontal angle and an elevation angle of a reflection mirror, or detecting a light receiving position on a light receiving unit. It follows that Hinderling does not disclose or suggest that a position of an object to be measured can be calculated based on a light receiving position on a light receiving unit, and based on the elevation angle and the elevation angle of the light receiving unit.

Neither JP '891 nor JP '018 supply the above deficiencies of JP '874 and Hinderling.

Reconsideration and allowance of all pending claims are respectfully requested in view of the foregoing.

Respectfully submitted,


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